AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method of operating a product, comprising:

monitoring ~~a first diagnostic information~~operating parameters of a component of the product;

monitoring system-level health of a ~~a second diagnostic information of a system of the product, the~~ system including the component; ~~, wherein the second diagnostic information does not include the first diagnostic information;~~

processing the operating parameters and the system-level health to determine health ~~combining the first diagnostic information~~ of the component, including performing principal component analysis (PCA) to provide a reduced set of data, and using the reduced set to determine a health assessment parameter for the component ~~and the second diagnostic information of the system~~; and

reconfiguring at least one of the component and the system to compensate for the component during operation if the health assessment parameter ~~a flight if the combined first and second diagnostic information~~ indicates a degradation of the component.

Claims 2-8 (Cancelled)

9. (Currently amended) The method of Claim 1, wherein the product is an aircraft and wherein the system includes ~~monitoring a second diagnostic information of a system includes monitoring a second diagnostic information of~~ a flight control system.

10. (Currently amended) The method of Claim [[1]] 9, wherein reconfiguring at least one of the component and the system includes reconfiguring [[a]] the flight control system to take into account a degradation of an actuator.

11. (Currently amended) The method of Claim 1, further comprising feeding back the reconfiguring of the at least one of the component and the system into the processing of the operating parameters and the system-level health~~fusion of the first and second diagnostic information~~.

12. (Currently amended) The method of Claim 1, further comprising inputting the system and component health ~~the combined first and second diagnostic information~~ into [[a]] maintenance support [[block]].

13. (Currently amended) The method of Claim 12, wherein ~~inputting the combined first and second diagnostic information into a maintenance support block includes inputting the combined first and second diagnostic information into~~ the maintenance support ~~block to~~ includes at least one of enable post-flight analysis and interpretation, and ~~assist in assessing the~~ prognosis of the component and system.

14. (Original) The method of Claim 1, further comprising detecting a level of degradation of the component that can be used to reduce false alarms in a Built-In Test system.

15. (Original) The method of Claim 14, further comprising trending one or more degradations to provide a prognostic capability.

16. (Original) The method of Claim 1, wherein reconfiguring at least one of the component and the system includes reconfiguring at least one of the component and the system using an integrated vehicle health management system.

17. (Original) The method of Claim 1, further comprising integrating an integrated vehicle health management system with reconfigurable control, and performing tests of at least one of the component and the system during actual operation of the product.

18. (Withdrawn) A method of monitoring a component, comprising:

operating the component at a set of operating conditions;

simultaneously with operating the component, inputting a command to the component;

simultaneously with inputting the command, monitoring at least some of the operating conditions

performing one or more analytical evaluations on the monitored operating conditions, including:

forming an input vector X containing the monitored operating conditions; and

forming a linear combined vector set Y for a particular time i in the form of

$Y_i = e_iX = e_{1i}X_1 + e_{2i}X_2 + \ldots + e_{iN}X_N$ where e represents the eigenvectors of the covariance matrix.

19. (Withdrawn– currently amended) The method of Claim [[18]] 1, wherein ~~performing one or more analytical evaluations on the monitored operating conditions includes computing a health measurement function as a function of the~~ eigenvalues of [[the]] a covariance matrix are computed from the PCA, and wherein the eigenvalues are used to compute the health assessment parameter.

20. (Withdrawn – currently amended) The method of Claim 19, wherein computing the health assessment parameter includes computing a [[the]] health measurement function ~~is determined as~~ scale $(\lambda_{max})\exp(BP(\lambda))$.

21. (Withdrawn – currently amended) The method of Claim [[18]] 19, wherein computing the health assessment function ~~performing one or more analytical evaluations on the monitored operating conditions~~ includes computing a health power spectrum as a function of the eigenvalues of [[the]] a covariance matrix.

22. (Withdrawn) The method of Claim 21, wherein the health power spectrum is determined as

$$S_{hps}(w) = \sum_{k=-\infty}^{\infty} R_{lcf}(k)e^{-jwk}$$

23. (Withdrawn – currently amended) The method of Claim 21, wherein the health power spectrum is developed from a Fast-Fourier Transform of an autocorrelation of [[the]] an input vector X and [[the]] a linear combined vector set Y.